StrataCom Intelligent Network Server

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This chapter provides information on the StrataCom Intelligent Network Server (INS) hardware platform. The information is organized into the following sections:

- Product Overview
- Product Numbers
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Note Documentation for the Intelligent Network Server is available in two forms: on a CD-ROM called Cisco Connection Documentation, Enterprise Series and printed books. A CD and hard-copy installation documentation ship with each chassis, and a configuration note ships with each component ordered. All configuration notes are available on the CD. Additional CDs and a subscription CD update service are also available.

You can also access Cisco technical documentation on the World Wide Web URL http://www.cisco.com. For more information, see the chapter “Documentation” at the end of the catalog.

Product Overview

The Intelligent Network Server is a standard high-performance UNIX hardware platform running networking software modules to support a number of network functions, including dial-up frame relay, switched virtual circuits and PBX Dynamic Network Switching. This choice of hardware as a foundation for INS functionality provides favorable price/performance, as well as a highly flexible base for rapid development of new features. Whether the features are intensive in terms of processing, memory or database functions, the INS platform has the flexibility to address them.

The Intelligent Network Server (INS) provides intelligent call processing for ATM WAN’s. Running on a SparcStation, the INS supports three key applications:

- ISDN dial-up Frame Relay for cost-effective access to information across the virtual enterprise
- ATM and Frame Relay switched virtual circuits (SVCs) for true bandwidth-on-demand functionality

- Dynamic Network Switching (DNS) for switching private PBX voice and data traffic over a cell-based ATM WAN

The INS provides you with the instantaneous, any-to-any connectivity required by applications such as LAN internetworking, client/server and client/client computing, shared workspaces, remote access, and multimedia communications.

The INS is a scalable, flexible platform for the provision of advanced data and voice networking services on wide area networks. The INS provides intelligent call processing for ATM WANs and supports capabilities that enable network operators to customize and enhance their service offerings. INS enables the construction of virtual enterprise networks. Virtual enterprise networks address the need for extending high-speed access to many different users in diverse geographies while facilitating the dynamic allocation of circuits and bandwidth capacity.

Key to the INS’s functionality is the sophisticated interaction between the platform's call processing and signaling software and the network database. This interaction creates advanced switching capabilities, which provide the flexible, any-to-any instantaneous connectivity options that are required by applications like LAN internetworking, client/server and client/client computing, shared workspaces, remote access, and multimedia communications.

The INS design is based on approved standards and implementation agreements from the ITU-TSS (CCITT), ANSI, ETSI, ECMA, the Frame Relay Forum and the ATM Forum.

Initially, the INS product line will extend network functionality by enabling three key applications/services:

- Dial-up Frame Relay

  With the market's growing dependence on frame relay and the increasing availability of ISDN (Integrated Services Digital Network), the INS provides new options in dial-up services, including ISDN dial backup for frame relay access lines and ISDN connectivity for remote offices.

- ATM and Frame Relay switched virtual circuits (SVCs)

  Frame relay and ATM networks gain added flexibility and responsiveness by supporting switched virtual circuits, which will become an essential method of creating logical connections in virtual enterprise networks.

- Dynamic network switching

  Advanced switching and signaling capabilities for PBX voice and data networks will provide significant cost savings, enhanced operational capabilities, and PBX feature transparency throughout your network fabric.

Standard Features

The Intelligent Network Server includes the following features:

- Division of Functionality
- Robustness
- Scalability
- Standards Compliance
- Customizability and Ease of Software Development

Division of Functionality

A fundamental characteristic of the INS architecture is the division of functionality between switches and Intelligent Network Servers. The switches handle the actual switching of the traffic. They manage existing connections by performing the routing, rerouting, bandwidth optimization and resource allocation. The servers handle new call processing requests, including functions such as evaluation of potentially complex criteria for connection initiation, handling of multiple addressing schemes, and enforcement of security. They also maintain an image of the appropriate network dialing plans that is used to determine the destination of all ISDN and SVC connections initiated towards the network.

This division of functionality offers the customer optimum cost, performance and feature availability, especially in light of the growing complexity of high-speed networks and the rapidly evolving standards and applications associated with them.

Robustness

The Intelligent Network Server is based on an extremely reliable hardware and software platform. A1:1 redundancy is available for the INS, and multiple INSs may be deployed within the network to support a load sharing arrangement. The implementation of specific features, such as ISDN access to frame relay networks, provides further robustness by allowing any access port to serve any user, thus enhancing the overall reliability of the entire wide area network.

Scalability

INS performance is completely scalable, through the deployment of more powerful hardware platforms or the deployment of additional servers within the network. Capacity can be added cost-effectively as user demand requires.

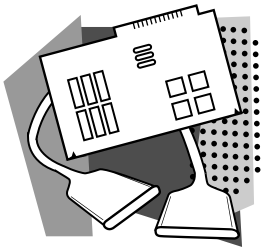
Standards Compliance

INS supports industry standard signaling protocols for ISDN, Frame Relay, and ATM. The flexibility of the INS platform also enables StrataCom to respond rapidly to changes in networking standards. Key standards supported include the following:

- ITU/T (CCITT) recommendation Q.931 for ISDN signaling
- ITU/T recommendation Q.933 for Frame Relay SVC signaling
- ITU/T recommendation Q.2931 for ATM SVC signaling
- Frame Relay forum SVC implementation agreement FRF.4
- ATM Forum User Network interface (UNI) specification, versions 3.0 and 3.1.
- ECMA 300-102, -143, & -165 standards for Q.SIG PBX networking protocol
- BTNR standard 188 for DPNSS PBX networking protocol

Customizability & Ease-of-Software Development

INS uses an industry-standard UNIX platform and provides programming interfaces to enable network operators to customize network services to address specific user requirements. In addition, the UNIX environment provides access to powerful software languages and development tools that will permit more rapid implementation of new features and applications.



Product Numbers

Table 234 lists the product numbers you can use to order the Intelligent Network Server.

Table 234 StrataCom Intelligent Network Server Product Numbers

Description	Product Numbers
DNS PBX Voice/Data	
DNS Server Shelf with AC Power Supply (Non-redundant)	DNS-2000-AC-NR
DNS Server Shelf with AC Power Supply (Redundant)	DNS-2000-AC-R
DNS Server Shelf with DC Power Supply (Non-redundant)	DNS-2000-DC-NR
DNS Server Shelf with DC Power Supply (Redundant)	DNS-2000-DC-R
DNS Required License	
Per CDP/CVM T1/E1 port software license	DNS-LIC-PRI
DNS Software	
Dynamic Network Switching 2000 Software (Non-Redundant)	DNS2-SW-NR-820
Dynamic Network Switching 2000 Software (Redundant)	DNS2-SW-R-820
DNS Feature Software	
Q.SIS Protocol Feature	DNS-SW-QSIG-820
DPNSS Protocol Feature	DNS-SW-DPNSS-820

Description	Product Numbers
Siemens' CorNET-NX Protocol Feature	DNS-SW-CNET-820
Japanese BPX Consortium Protocol Feature	DNS-SW-Q931A-840
DAS ISDN Dial-Up Frame Relay	
DAS Server Shelf with AC Power Supply (Non-redundant)	DAS-2000-AC-NR
DAS Server Shelf with DC Power Supply (Non-redundant)	DAS-2000-DC-NR
DAS Server Shelf with AC Power Supply (Redundant)	DAS-2000-AC-R
DAS Server Shelf with DC Power Supply (Redundant)	DAS-2000-DC-R
DAS Required License	
Per T1/E1 ISDN/Frame Relay Port Software License	DAS-LIC-ISDNFR
Dial-Up Frame Relay Software	
Dial Up Frame Relay Software 2000 (Non-Redundant)	DAS2-SW-NR-811
Dial Up Frame Relay Software 2000 (Redundant)	DAS2-SW-R-811
DAS Feature Software	
AT&T 4/5 ESS Protocol Feature	DAS-SW-ESS-810
NTI DMS Protocol Feature	DAS-SW-DMS-810
ETSI EUROISDN Protocol Feature	DAS-SW-ETSI-811
NTT (Japan) Protocol Feature	DAS-SW-NTT-811
AUSTEL (Australia) Protocol Feature	DAS-SW-AUSTEL-811